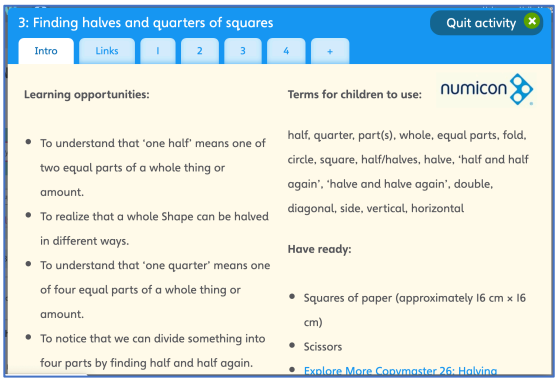
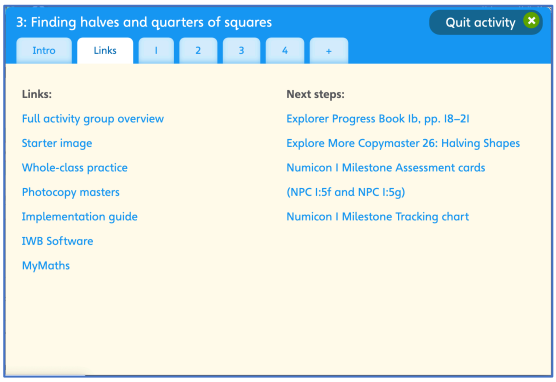
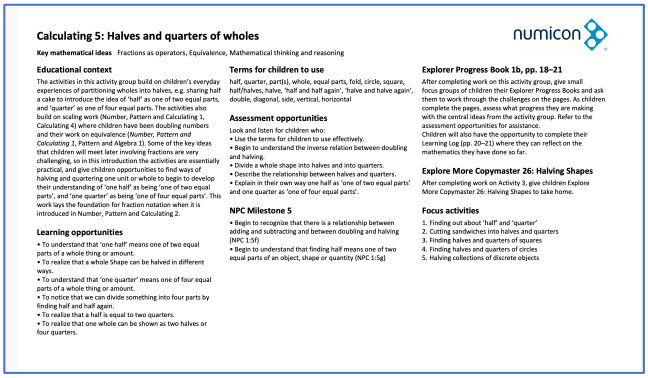
Numicon Teaching Handbook 1 Online Resources - selection only to give as examples

	Strand	Activity Groups	Included in every activity group:
1	P & A 2	Cover the board	Explore More pages Explorer Progress pages Relevant Assessment cards Assessment tracker file - excel
2		Dartboard	
3		Guess which shape is in the bag	
4		Which coins are in the purse?	
5		Three in a row	
6		Building oblongs	
7	P & A 3	Odds and evens	
8		Investigating odds and evens with socks	
9		Odds and evens with Numicon shapes	
10		Patterns of addition with odds and evens	
11	Cal 5	Halves and quarters	
12		Sandwiches with halves and quarters	
13		Halves and quarters of squares	
14		Halves and quarters of circles	
15		Halves and quarters of discrete objects	
16	Mea 4	Heavier and lighter	
17		Weighing using a pan balance	
18		Comparing weights of three objects	
19		Weighing using non std. and pan balance	
20	Mea 5	Finding what holds more or less	
21		Finding how much a container holds	
22		Finding capacities of non- std units	
23		Measuring more accurately	

For example: Cal 5 Halves and quarters of wholes

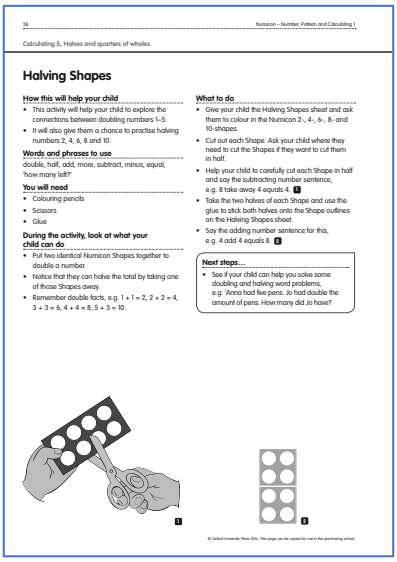






Number, Pattern and Calculating Teaching Resource Handbook 1

Photocopy masters



56 Numicon – Number, Pattern and Calculating 1

Calculating 5, Halves and quarters of wholes

Halving Shapes

How this will help your child

- This activity will help your child to explore the connections between doubling numbers 1–5.
- It will also give them a chance to practise halving numbers 2, 4, 6, 8 and 10.

Words and phrases to use

double, half, add, more, subtract, minus, equal, 'how many left?'

You will need

- Colouring pencils
- Scissors
- Glue

During the activity, look at what your child can do

- Put two identical Numicon Shapes together to double a number.
- Notice that they can halve the total by taking one of those Shapes away.
- Remember double facts, e.g. 1 + 1 = 2, 2 + 2 = 4, 3 + 3 = 6, 4 + 4 = 8, 5 + 5 = 10.

What to do

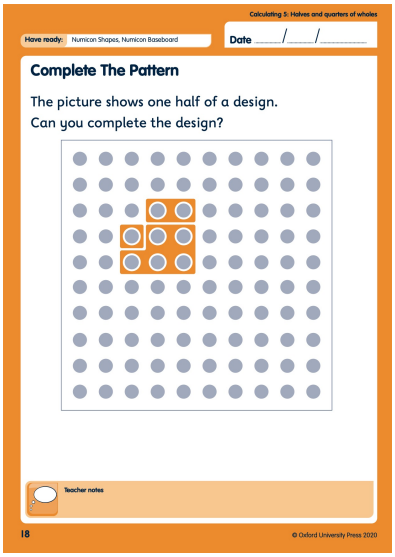
- Give your child the Halving Shapes sheet and ask them to colour in the Numicon 2-, 4-, 6-, 8- and 10-shapes.
- Cut out each Shape. Ask your child where they need to cut the Shapes if they want to cut them in half.
- Help your child to carefully cut each Shape in half and say the subtracting number sentence, e.g. 8 take away 4 equals 4. 1
- Take the two halves of each Shape and use the glue to stick both halves onto the Shape outlines on the Halving Shapes sheet.
- Say the adding number sentence for this, e.g. 4 add 4 equals 8. 2

Next steps...

- See if your child can help you solve some doubling and halving word problems, e.g. 'Anna had five pens. Jo had double the amount of pens. How many did Jo have?

1

2



Calculating 5: Halves and quarters of wholes

Have ready: Numicon Shapes, Numicon Baseboard

Date ____/____/____

Complete The Pattern

The picture shows one half of a design.
Can you complete the design?

Teacher notes

numicon

Practice and discussion: Whole-class

- Discuss with children how and when the mathematics they have been learning could help them in solving problems.
- Take opportunities to discuss half/halves and quarter(s) as they occur in everyday situations, e.g. drinking half a carton of juice, the first half of a play or a football match.
- Show children a Numicon 1- 2-, 3- 4- or 5-shape saying this is half of another Shape. Ask them to show you the whole Shape.
- Show children an even Numicon Shape, and ask them to show you a Shape that would be half. Vary by asking them to show you the two Shapes that show the two halves.
- Using contexts within the school day ask children questions where they have to find double or half, e.g. 'We only have 3 apples but double the amount of children would like an apple today. What should we do?' Also include questions such as, 'The answer is 10, what did I double?' and '4 is half, what was the total?'

3: Finding halves and quarters of squares

Quit activity

Intro | Links | 1 | 2 | 3 | 4 | +

Step 1

Remind children about 'measuring by eye' when cutting sandwiches into halves and quarters to try to make the parts equal. Show children the paper squares and ask for suggestions for dividing or sharing them in half. Discuss their suggestions, which may include measuring, measuring by eye, folding or drawing a line across the square. Give each child a paper square and allow them time to try out their ideas.

Look and listen for those explaining how they have tried to make two equal parts. Discuss their ideas and agree on the simplest and most accurate method. Look and listen for any children who have folded the paper and ask them to show how they have done it. Make sure all children realize that the opposite edges of the paper square have to be lined up carefully when folding.

3: Finding halves and quarters of squares

Quit activity

Intro | Links | 1 | 2 | 3 | 4 | +

Step 2

Give each child a fresh paper square to experiment with folding it into two equal parts. Children may choose to fold their square horizontally, vertically, or diagonally. Compare all squares and discuss which are folded in half. Ask children how they know. Look and listen for children who explain that the two halves exactly cover one another and so must be equal in size (see image).

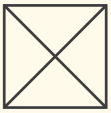
3: Finding halves and quarters of squares

Quit activity

Intro | Links | 1 | 2 | 3 | 4 | +

Step 3

Ask children how they could fold their square into four equal parts. Look and listen for children who fold their square in half again, and then open it out to show four parts using the word 'quarter'. Discuss and agree that their squares are now divided into four equal parts, or four quarters (see image).



3: Finding halves and quarters of squares

Quit activity

Intro | Links | 1 | 2 | 3 | 4 | +

Step 4

Children can now cut their square into quarters, and then move the pieces to show one quarter, two quarters and three quarters. Ask 'How many quarters go together to equal one half?' Look and listen for children who have noticed this equivalence and answer 'two'. Ask other questions, such as 'How many halves go together to equal one whole?' and 'How many quarters go together to equal one whole?' Look and listen for children who can describe

After completing work on this activity, give children the opportunity to take home and complete Explore More Copymaster 26: Halving Shapes. This will help children to explore the connections between doubling numbers 1–5.

3: Finding halves and quarters of squares

Quit activity

Intro | Links | 1 | 2 | 3 | 4 | +

Paired or small group work

Have ready: different sized squares, rectangles and equilateral triangles (no larger than A5, no smaller than 5 cm squared), scissors, glue

Children choose two identical shapes of paper and agree that one child will fold and cut their shape into halves and the other will fold and cut theirs into quarters. Each then sticks their equal parts into their book showing the whole shape again. Children compare their shapes now divided into halves and quarters and